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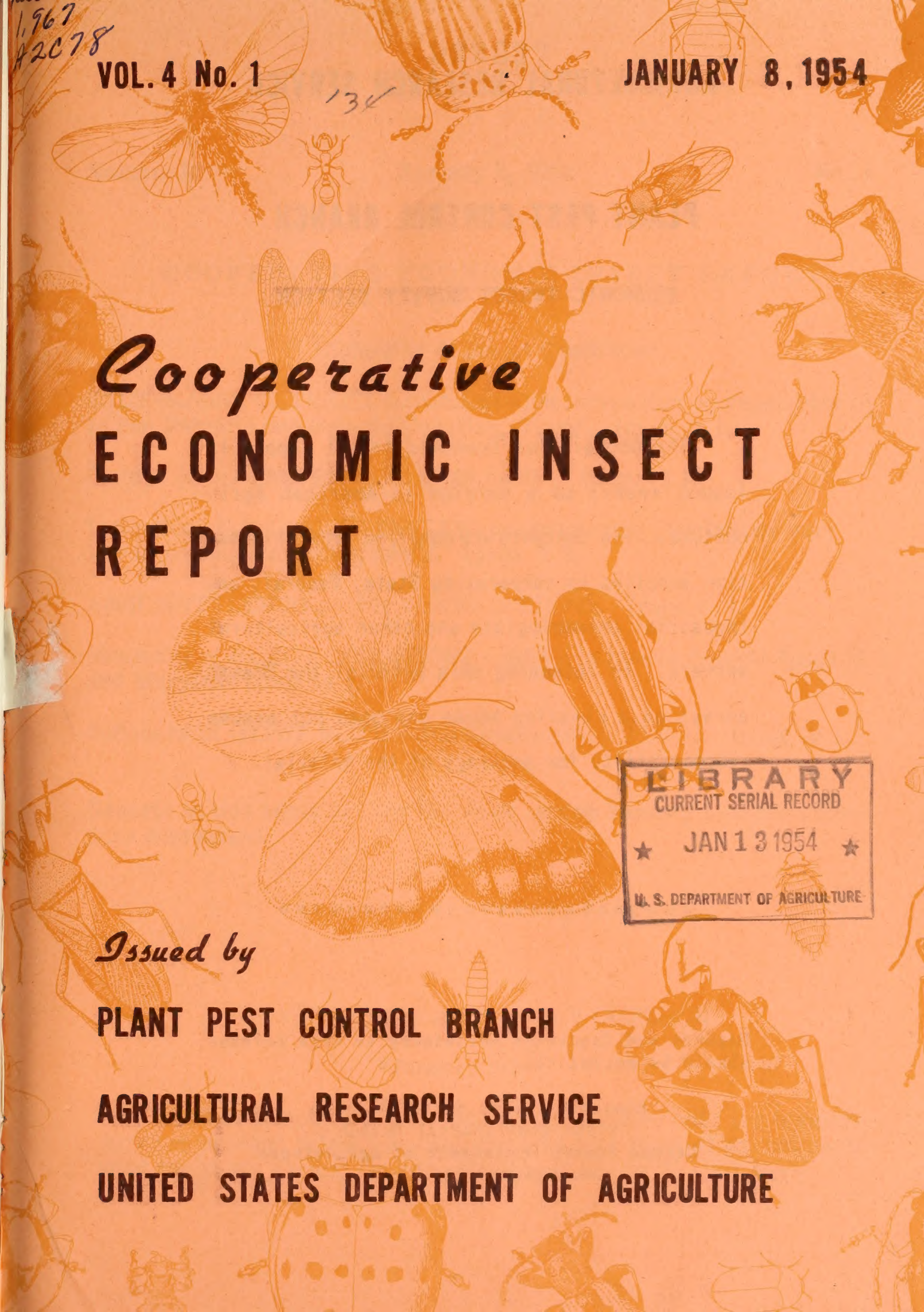

VOL. 4 No. 1

JANUARY 8, 1954

134

# *Cooperative* ECONOMIC INSECT REPORT

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PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

# AGRICULTURAL RESEARCH SERVICE

# PLANT PEST CONTROL BRANCH

## ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Economic Insect Survey Section
Plant Pest Control Branch
United States Department of Agriculture
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Volume 4 January 8, 1954 No. 1

# COOPERATIVE ECONOMIC INSECT REPORT

## Highlights of Insect Conditions

SALT-MARSH CATERPILLAR infestation increasing on vegetables in San Patricio and Refugio Counties, Texas. (page 5 ).

Studies of HORNWORM moth flight habits. (page 5 ).

Indications that POTATO PSYLLID overwintering populations very low in southern breeding areas. (page 7 ).

Adult SPITTLEBUG survey results in Illinois. (page 4 ).

Summary of INSECT CONDITIONS - 1953 - in Massachusetts (page 11 ) and Maryland (page 14 ).

Summary of GYPSY MOTH defoliation-summer of 1953. (page 19 ).

Reports in this issue are for the week ending January 1 unless otherwise designated.

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## WEATHER BUREAU'S 30-DAY OUTLOOK

*January 1954

The Weather Bureau's 30-day outlook for January calls for temperatures to average below seasonal normals over most of the nation except for above normal over the Northwest and in New England.

The most unseasonable coldness is indicated in the West Gulf States and central Mississippi Valley.

Precipitation is expected to exceed normal in the Gulf States and in areas east of the Appalachians, much of it in the form of snow north of Virginia. Subnormal amounts are indicated west of the Continental Divide and in the Central Plains, and near normal amounts in areas not specified.

*This report released by the Weather Bureau on December 30, 1953.

Weather forecast given here is based on the official 30 day "Resume and outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington, D. C. Price: $4.80 a year, $2.40 for six months.

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## WEATHER FOR THE WEEK ENDING JANUARY 5, 1954

The past week's weather was unseasonably mild, dry and sunny, except for substantial rains along the north Pacific Coast and in the extreme Southeast. No measureable precipitation occurred in the central Mississippi Valley, most of the Great Plains, and far Southwest. From Iowa, Missouri, and Arkansas eastward to the Appalachians, subsoil moisture is short, streams and wells low, and water hauling continues in a few sections. Even in parts of Texas the shortage of soil moisture is again becoming a critical factor in the crop situation, and in Oklahoma stock water is again running low in the drier sections and further precipitation during January 1954 will be necessary to maintain adequate surface moisture for small grains.

In the far Southwest ranges continued to deteriorate in Arizona, and winter grains in New Mexico need moisture. In southern Utah and Nevada ground water levels continue at or near record low levels. In southern California where drought conditions continued, the total precipitation, 4.08 inches, for 1953 at Los Angeles was the least there for any calendar year on record; forest fires burned over 14,000 acres with a loss of $6,000,000. (Weather Continued on page 10 ).

## CEREAL AND FORAGE INSECTS

APHIDS ON GRASS FLORIDA Populations of yellow sugarcane aphid (Sipha flava) have recently declined sharply in the Everglades. In some cases this decline may be partly attributed to effects of frost on the pangola grass. Greenbug (Toxoptera graminum) population has also dropped due to effects of frost on some pastures, and to a great extent to numerous braconid parasites. Lady beetles and syrphid fly larvae have been active in infestations of both species. (Genung).

FALL ARMYWORM (Laphygma frugiperda) - FLORIDA - Infestations fairly high in inadequately treated corn in the Everglades. (Genung).

A WINTER GRAIN MITE (Penthaleus major) - TEXAS - Local medium to heavy infestation on oats in Kaufman County. Some treatment planned. (Garner).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Medium local infestation on barley in Delta County. Recent cold weather probably decreased the population. (Garner).

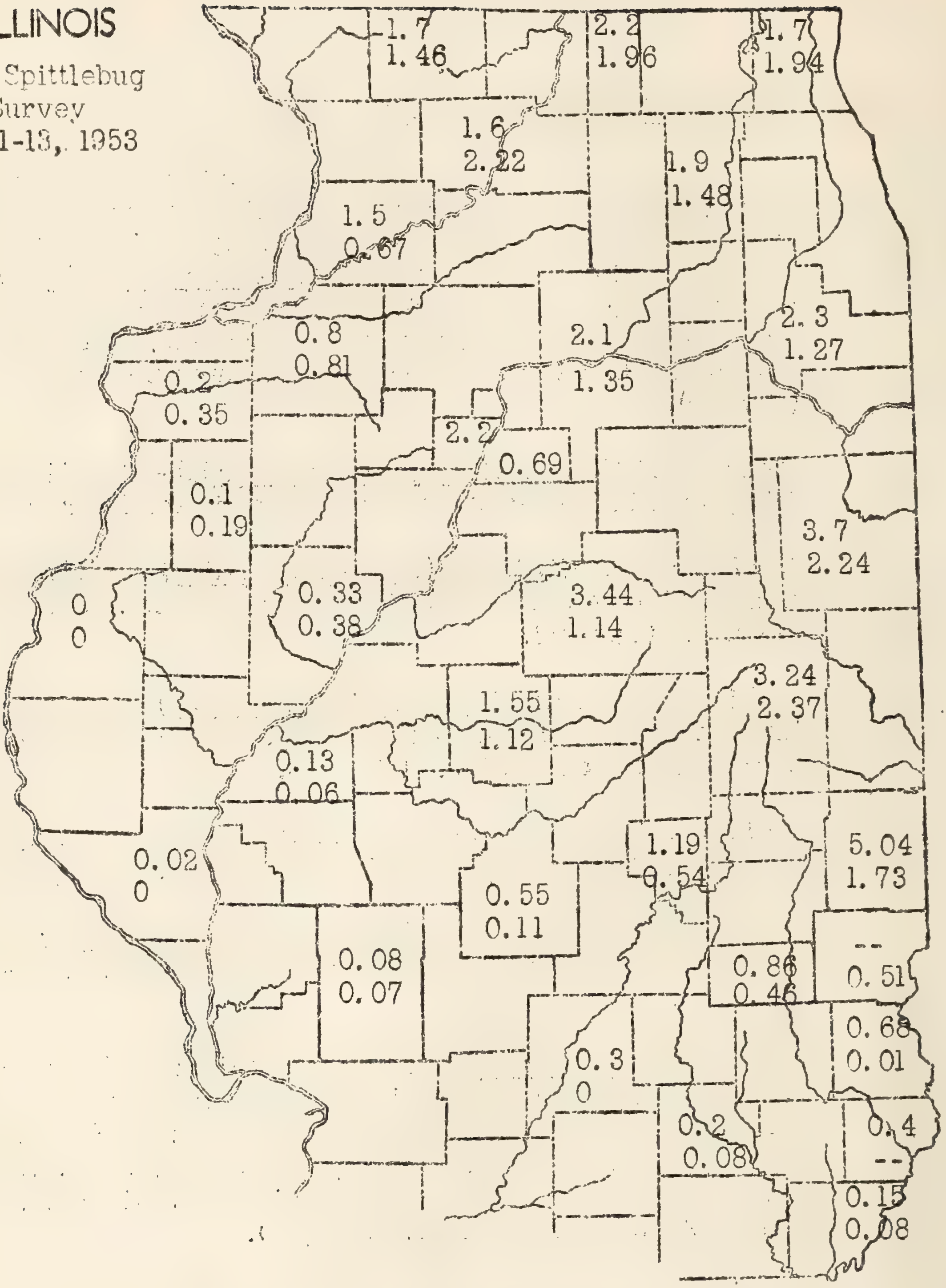
WHITE GRUBS - NORTH CAROLINA - Damaged newly-seeded alfalfa in Yancey County. (Jones, Dillingham, Oct. through Dec. Rept.).

BANDED CUCUMBER BEETLE (Diabrotica balteata) - FLORIDA - Considerable numbers noted in corn plantings in the Everglades. (Genung).

Distribution of Meadow Spittlebug: ILLINOIS - The following information was received after the distribution map was carried in Vol. 3, no. 51. Additional infested Illinois counties include: Jo Daviess, Winnebago, Carroll, Lee, De Kalb, Kendall, Livingston, Ford, Adams, Brown, Schuyler, Scott, Green, Shelby, Effingham, Richland, Edwards, Bond, Madison and Monroe. (Bigger).

## ILLINOIS

Adult Spittlebug
Survey
Sept. 1-13, 1953



Figures shown on the map represent the average number of adult spittlebugs taken per sweep with an insect net. The upper figure is for the 1952 survey; the lower for the 1953 survey. In general, the population has decreased, but the main area of infestation, eastern Illinois, remains about the same. However, the potential is lower than in the fall of 1952. (Petty).

## TRUCK CROP INSECTS

SALT-MARSH CATERPILLAR (Estigmene acrea) - TEXAS -- Infestation on increase in San Patricio and Refugio Counties where serious damage occurred to flax and young cotton in spring of 1952. Caterpillars at present on weeds and vegetables with an occasional adult around lights. It is very possible that control measures will be necessary in early of mid-spring of 1954. (Greer).

WIREWORMS - NORTH CAROLINA - Damage sweet potatoes in Johnston and Columbus Counties. (Jones, Oct. through Dec. Rept.).

## Studies of Hornworm Moth Flight Habits

The summarized records of hornworm moth captures during the season of 1953 in 13 electric light traps distributed from Florida to Connecticut are given in the table on next page. These "black light" traps, developed and installed by the Division of Farm Electrification, BPISAE, were operated cooperatively by Federal and State entomologists in 8 states to obtain information on the seasonal occurrence and flight habits of the moths of hornworms that attack tobacco. A study of the records shows a very good positive correlation between latitude and the date of first occurrence of tobacco hornworm moths, but not of tomato hornworm moths. It is of especial interest that, of the tobacco hornworms moths caught, only one-fourth were females, although the sexes are known to occur in nearly equal numbers in the field. It appears, therefore, that most of the female moths of the most important hornworm pest of tobacco are not attracted to the "black light" traps used in these studies. These traps have now been operated throughout two complete seasons. The trends as indicated by the moth captures were in general quite similar in both years, although the moths of both species were captured in considerably larger numbers in 1952 as compared to 1953 at nearly all locations. These studies have failed to furnish any evidence that there may be a general directional movement of hornworm moths. There is evidence of moving populations, but the origin of the moths in any given locality is still a matter for speculation.

## Summary of numbers of hornworm moths taken in light traps, showing dates first moths taken and the percentage of sexta - 1953

| Location | *Date first moth taken | | Total moths taken | | | | Percent sexta |
|---|---|---|---|---|---|---|---|
| | | | sexta | | 5-maculata | | |
| | sexta | 5-maculata | Male | Female | Male | Female | |
| Quincy, Fla. | Apr. 16 | June 12 | 526 | 382 | 10 | 1 | 99 |
| Charleston, S. C. | May 5 | June 4 | 177 | 93 | 10 | 13 | 92 |
| Florence, S. C. | May 5 | May 4 | 1808 | 673 | 29 | 26 | 98 |
| Clemson, S. C. | May 4 | May 6 | 565 | 87 | 133 | 62 | 77 |
| Candor, N. C. | May 14 | May 14 | 730 | 113 | 164 | 74 | 78 |
| Greenville, N. C. | May 14 | May 7 | 2033 | 662 | 217 | 140 | 88 |
| Knoxville, Tenn. | May 25 | May 22 | 30 | 11 | 24 | 24 | 46 |
| Oxford, N. C. | May 13 | May 11 | 648 | 225 | 416 | 345 | 53 |
| Clarksville, Tenn. | June 4 | June 2 | 375 | 142 | 80 | 80 | 76 |
| Chatham, Va. | May 19 | May 15 | 364 | 76 | 309 | 220 | 45 |
| Beltsville, Md. | May 28 | June 4 | 38 | 29 | 123 | 85 | 24 |
| Moorestown, N. J. | June 8 | June 10 | 332 | 57 | 76 | 37 | 77. |
| Windsor, Conn. | June 22 | June 22 | 19 | 11 | 34 | 32 | 31 |
| Totals ........................ | | | 7645 | 2561 | 1625 | 1139 | |
| | Percentages | | 75 | 25 | 59 | 41 | 79 |
| 1952 Totals ........................ | | | 11,910 | 4713 | 4758 | 3897 | |
| | Percentages | | 72 | 28 | 55 | 45 | 66 |

*See CEIR, 1952, Vol. 2, No. 12, p. 167 for dates first moths taken in 1952.

(Stahl and Lawson)

LEAF MINERS - FLORIDA - Light to moderate numbers on mustard and turnips near Lake Worth. (Genung).

POTATO PSYLLID (Paratrioza cockerelli) - A survey in southern TEXAS and southern NEW MEXICO in November showed psyllid populations to be lower than at the same time in any other year since records were started in 1946, even though host plants (wild Lycium) were in better condition than in most years. This may be due to the hot summer, which prevented summer populations from increasing and moving to the overwintering area, and to the mild fall which had not forced psyllids to complete their movement into the overwintering area at the time the survey was made. (Wallis).

APHIDS - WASHINGTON - Small colonies of cabbage aphid (Brevicoryne brassicae) in brussels sprouts and late cabbage in a garden at Sumner. Somewhat more prevalent at this time than for several years. Rose aphid (Macrosiphum rosae) relatively scare in Sumner area, but a few colonies can be found. (Doucette). FLORIDA Light to fairly heavy populations on mustard and turnips near Lake Worth. (Genung). A decline in populations of cabbage aphids on cabbage and collards noted in Gadsden County area. (May).

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - FLORIDA- Rather heavy infestation on turnips continues in Gadsden County area. (May).

POTATO TUBERWORM (Gnorimoschema operculella) - NORTH CAROLINA - Reported from Bertie County on Irish potatoes. (Jones, Coleman, Oct. through Dec. Rept.).

CABBAGE CATERPILLARS - FLORIDA - Moderate infestation of loopers and imported cabbageworm on collards and cabbage in Gadsden County area. Imported cabbageworm apparently heavier. (May).

JUNIPER WEBWORM (Dichomeris marginella) - NORTH CAROLINA Severe damage to junipers and red cedar in Haywood County. (Scott, Oct. through Dec. Rept.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - NORTH CAROLINA - Noted on many plants and trees in the State. Privet in Carteret County heavily infested. (Garner, Scott, Oct. through Dec. Rept.).

## FRUIT INSECTS

Fruit Insect Conditions, Oct. through Dec., in North Carolina: PEACH TREE BORER (Sanninoidea exitiosa) damage was reported from Pender, Robeson, Chowan and Pasquotank Counties. Widespread damage to pecans from TWIG GIRDLER. Appeared to be most extensive in Beaufort, Union and Wake Counties. Reports from many areas indicate that damage from PECAN WEEVIL (Curculio caryae) has been extensive. Damage in Cabarrus County greater than usual. PECAN CARPENTERWORM (Cossula magnifica) caused damage to pecan trees in Perquimans County. (Jones, Scott, Allen, Sasser).

## COTTON INSECTS

COTTON LEAFWORM (Alabama argillacea) - NORTH CAROLINA - More prevalent than usual in 1953, though damage was slight since attack occurred late in the season. Hoke County reported widespread infestations. (Scott).

## CORRECTION

PINK BOLLWORM (Pectinophora gossypiella) - The following statement which appeared, in part, in vol. 3, no. 50, p. 837 should be corrected to read as follows: "Final tabulations show that two new counties have been found infested in Arkansas, ten in Oklahoma and six in Louisiana. Three of the Louisiana Parishes are within the previously regulated area and three outside."

## INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - MISSISSIPPI - Some evidence of Bovicola bovis and other species visible on some cattle in Delta region. (Lewis).

COMMON CATTLE GRUB (Hypoderma lineatum) - MISSISSIPPI - Infestations in backs of some cattle in delta region, but no heavy populations except in some animals moved from other areas. (Lewis)

## STORED PRODUCT INSECTS

STORED GRAIN PESTS - NORTH CAROLINA - Survey of farms in Johnston County showed many bins infested to some degree. In most cases, only secondary pests such as confused flour beetle and saw-toothed grain beetle found. (Scott, Oct. through Dec. Rept.).

A DERMESTID (*Trogoderma granarium*) - CALIFORNIA - Recorded in Imperial and Riverside Counties for the first time. Heavy infestations found in barley and alfalfa seed at Brawley and in flax seed at Imperial in Imperial County. Heavy infestations also in pinto beans and sacked wheat at Blythe in Riverside County. (Armitage).

## MISCELLANEOUS INSECTS

SCALE INSECTS - ARIZONA - *Dactylopius tomentosus* infesting cactus in Canyon Lake area. *Diaspis simmondsiae* on jojoba and *D. townsendi* on mesquite also noted in same area. (Brantlinger).

## RECENT IMPORTANT INTERCEPTIONS AT PORTS OF ENTRY

Weevils intercepted recently in sweet potatoes from foreign countries at various ports included the following: 1 adult *Euscepes postfasciatus* (Fairm.) in mail from Cuba at Washington, D. C. (Gouldman); 13 adults of *Cylas formicarius* (F.), possible subspecies *formicarius* in cargo (non-entry material - surplus monkey feed) from India at Savannah (Durham); 20 larvae, 37 pupae and 106 adults *Cylas puncticollis* Boh. in stores from British West Africa at New York (Bednar); 8 larvae of *Palaeopus* sp. in mail from Jamaica at New York (Gillis); and 4 larvae of *Rhyssomatus* sp. in baggage from Venezuela at New York (Hidalgo, Andrews).

While inspecting Brazilian oranges in stores aboard two different vessels recently, Inspectors Prentiss and Wehrle of New York each found a living lepidopterous larva boring in the fruit. They promptly sealed up the remaining fruits while the vessels were in port. The insects were identified as *Gymnandrosoma aurantianum* Costa Lima, a species of olethreutid not known to be present in the United States.

This pest has been intercepted from Argentina, Brazil, Ecuador, Trinidad, Uruguay, and Venezuela. The larvae feed in all of the common citrus fruits causing them to drop. Interceptions have been made of an undescribed species of Gymnandrosoma that causes considerable injury to citrus in Dominica, B. W. I. (Ramsay).

## Weather Continued

The snowpack in the Rocky Mountains continued below normal, as the dry, warm weather resulted in little additional accumulation. East of the Rockies, at the end of the week, the ground was covered with snow only in areas along the Canadian Border. In an area extending from northeastern North Dakota to Upper Michigan, depths generally ranged from about 6 to 15 inches.

The week was colder than normal only in the far Southwest. Freezing occurred all week in the southern irrigated valleys of Arizona, on one or two mornings in California's Central Valley, and frost extended southward in Texas to a line from Corpus Christie to Cotulla, but no material damage was reported.

Subzero minima occurred on several mornings in the upper Lakes and upper Mississippi Valley and on a few days in northern New York and northern New England. The most abnormal temperatures occurred in the northwestern Great Plains where weekly averages ranged up to 16° above normal. But the week was also unusually warm for the season in the Midwest, the upper Mississippi Valley, and Great Lakes where weekly averages ranged up to 10° above normal. (Summary Supplied by the U. S. Weather Bureau ).

# SUMMARY OF INSECT CONDITIONS 1953

## MASSACHUSETTS

Reported by Bourne, Wheeler, Becker,
Shaw, Whitcomb

Vegetable Pests: FLEA BEETLES were generally very abundant early. Persistent throughout the whole season, especially in potato fields. There seemed to be no time when they were not present in more or less abundance even in fields regularly sprayed. Also troublesome in tomatoes. More than the usual number of complaints of SPRING-TAILS during May which was an unusually "wet" month. CABBAGE MAGGOT (Hylemya brassicae) attack was very heavy in eastern and western Massachusetts. ASPARAGUS BEETLES (Crioceris spp.) began to be active about Mid-May. Generally abundant over State and attack was heavier than usual. ONION MAGGOT (Hylemya antiqua) flies first noted in Connecticut Valley area May 18th. Attack was heavy in some fields - light in others. Spotty infestation. ONION THRIPS (Thrips tabaci) first observed on set onions in Connecticut Valley area May 12-15th. Attack about normal. 1953 was decidedly an " APHID year." Heavy attack on almost ever susceptible crop. Especially persistent on vine crops and crucifers. STRIPED CUCUMBER BEETLE (Acalymma vittata) was no more than normally abundant. Generally the infestation was on the light side. MEXICAN BEAN BEETLE (Epilachna varivestis) was generally less troublesome than usual. CABBAGEWORMS were generally present and abundant and difficult to control, especially cabbage looper. SQUASH BUG (Anasa tristis) infestations were somewhat less than normal. LEAF-HOPPERS were generally abundant and more of a pest than usual on potatoes in many fields. Fewer complaints than usual received on CUTWORMS and field observations showed the insects were somewhat less troublesome than normal.

Corn Insects: CORN FLEA BEETLE (Chaetocnema pulicaria) was more numerous than usual in some sections. Associated with severe outbreaks of Stewart's disease during the long, hot periods of mid-summer. EUROPEAN CORN BORER (Pyrausta nubilalis) was heavy generally on untreated early market sweet corn. Over the season as a whole attack was rather more serious than usual. CORN EARWORM (*Heliothis armigera*) was abundant on early sweet corn. The early appearance of well developed larvae would indicate the pest successfully overwintered at least in Connecticut Valley and southeastern Massachusetts. This pest persisted throughout the entire growing season.

*Forage Crop Pests:* SPITTLEBUGS were very abundant in late May and during June in fields of alfalfa and clover. The heavy rainfall during May (6 3/4 inches) promoted rapid growth of alfalfa, clover and grasses, and little damage resulted from spittlebug attack on these crops. The drought during remainder of season coupled with periods of very high temperatures caused more damage to forage crops in general than insect attack.

*Pests of Shade Trees and Ornamentals:* The outstanding instance of this group was the devastating attack of GYPSY MOTH (*Porthetria dispar*) especially in the Connecticut River Valley and adjoining areas. APHIDS were heavy on almost every susceptible tree or shrub, especially roses and viburnum. MITES were also very abundant throughout entire season. Spruce spider mites were persistent. *Tetranychus canadensis* was abundant on elms and *Schizotetranychus schizopus* very abundant on willow. TENT CATERPILLARS were somewhat more abundant than usual (both species). Many instances of complete stripping of even large trees. FALL WEBWORM (*Hyphantria cunea*) was less abundant than in recent years. ELM LEAF BEETLE (*Galerucella xanthomelaena*) was generally abundant and seemed to be on the increase. JAPANESE BEETLE (*Popillia japonica*) was reported as slightly less abundant in most areas. Seriously abundant principally in areas of recent attack on the perimeter of spread. Two heavy attacks of BOXELDER BUG (*Leptocoris trivittatus*) in southeastern part of State. There were several cases of severe PINE NEEDLE MINER (*Exoteleia pinifoliae*) attack on scrub pine in the sandy region of Cape Cod and in similar sandy area on Montague plain on the eastern edge of the Connecticut River Valley near French King Bridge. A severe local outbreak of SATIN MOTH (*Stilpnotia salicis*) occurred on the University Farm. A row of old full grown Carolina poplars was completely defoliated. Local outbreaks were also found in the adjoining town of Hadley.

During late fall numerous complaints were received of CLOVER MITES invading dwellings. EUROPEAN FRUIT LECANIUM (Lecanium corni) was discovered in very great abundance on elms along the Main Street of Old Deerfield.

General: EUROPEAN EARWIG (Forficula auricularia) - Records showed these insects spreading along the North Shore in to Essex County. Also spread inland to several towns in the Merrimack River Valley in northeastern Massachusetts. VARIGATED CUTWORM- (Peridroma margaritosa) - Det. Franclemont - On August 12 attention was called to a heavy attack by this species in a field of tobacco. Severe riddling of lower leaves was noted. On many plants some of the middle and upper leaves were badly damaged. In many cases 8-10 larvae were collected from around a single plant. As the field was treated prior to planting, conditions indicated the infestation resulted from moths infiltrating the area in middle or late July. Further examination showed this damage to be present in many other tobacco fields in the vicinity. None of the damage was noted until the fields were being harvested. More complaints than usual of TERMITE attack in dwellings and other buildings. PRAYING MANTIS were again reported (as in 1952) as present in both eastern and western Massachusetts in much larger numbers than usual. A LYGAEID (Nysius groenlandicus (Zett.)) - Insects resembling false chinch bugs were collected at Westover field where they were heavily infesting some buildings. Dr. R. I. Sailer identified the specimens and stated as follows: "These specimens are definitely not ericae and except for rather small size agree in every respect with groenlandicus. This is most surprising for groenlandicus is a northern species not previously known from within the boundaries of the United States (excluding Alaska). This may be an example of a species introduced by air commerce and if so is of particular interest because of the southward establishment of an arctic species."

## MARYLAND

Reported by T. L. Bissell

New and Nortworthy Insects: ALFALFA WEEVIL (Hypera postica), a recently introduced pest, caused heavy losses of alfalfa over several counties in 1953 and slightly extended its range. From Baltimore County, around the head of the Bay to Queen Anne s, the weevil ruined a half to three-fourths of the first cutting in many fields and delayed growth of the second cutting for ten days to two weeks. The alfalfa weevil was found in small numbers in the eastern part of Frederick County for the first time--also in Charles, Calvert and Worcester. Now 18 counties in the State are known to be infested. None were found from Washington County westward. ARMYWORM (Pseudaletia unipuncta) outbreak was heaviest since 1950. First larvae of the season were observed May 11, on barley and in interplanted clover in Worcester County and May 12 on lawn grass in Wicomico County. May 18 to 23, armyworms appeared in Talbot, Caroline, and Howard Counties. By the first week in June there was heavy damage to barley, oats, grass, and young corn from Harford County to Montgomery and Frederick. In some fields of barley 3/4 of the heads were cut off. Armyworms appeared in Garrett County the middle of June with damage to hay and corn. There was unusually heavy damage from GRASSHOPPERS in central Maryland and some damage on the upper Eastern Shore. The species involved were mainly the red-legged, differential, and two-striped grasshoppers. Nymphs were first noted the last of June in alfalfa fields in Montgomery County, and adults became noticeable July 15. Damage was severe locally on alfalfa, corn, and pastures in Montgomery and Frederick Counties. They were thick in clover fields in Queen Annes County. Grasshopper damage to pastures was aggravated by dry weather in midsummer. Fruit trees in Washington County were infested.

Brood X of PERIODICAL CICADA (Magicicada septendecim) occurred over the Piedmont Plateau and in Western Maryland. Emergence holes appeared in the ground as early as April 15 but the main emergence began at College Park May 9, as expected. Oviposition started about May 25 and was over by June 15. Damage from oviposition in oak twigs was very conspicuous all over central Maryland; there was also injury to dogwood, azaleas, and other shrubs. In the Hancock area apple trees up to three years old suffered severely and in central Maryland peach trees were damaged. Cicadas were particularly abundant in the suburbs of Baltimore City. TOMATO RUSSET MITE (*Vasates lycopersici*) was identified from Maryland for the first time in 1953. Tomato fields all over the Eastern Shore and westward to Carroll County were damaged. Mites were first found early in July in Worcester County; a month later they were found in Carroll County. Damage consisted in killing all but the top leaves, russeting the stem, exposing the fruit to sunscald, and reducing the late crop. LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) larvae moved from crab grass to a late planting of young snap beans in Wicomico County in August. A MOSQUITO (*Aedes trivittatus*) which has never been an important pest had a high population at College Park and Rock Creek Palisades, Montgomery County, in May and June. It bites viciously in the daytime and at twilight. Little is known of the biology (Bickley).

*Corn and Grain Insects:* EUROPEAN CORN BORER (*Pyrausta nubilalis*) activity started the latter part of April on the lower Eastern Shore and corn planted in May became heavily infested. There was also some heavy stalk damage to sweet corn in July, however, damage at the canneries was negligible. The fall population was somewhat higher than in 1952, particularly on the lower Shore. Corn borers did some damage to potatoes and wheat. CORN EARWORM (*Heliothis armigera*) infestations in corn were about normal. Spraying market and canning corn for earworm is increasing. FALL ARMYWORM (*Laphygma frugiperda*) infestation was general beginning August 8; damage noted from Somerset County to Allegany. Late sweet corn in Montgomery County showed up to 35% infestation on August 14. SAP BEETLE damage in harvested sweet corn was very light.

*Hay Crop Insects:* Young SPITTLEBUGS were found hatching March 24 but subsequent cool weather delayed the main hatch till after the middle of April in most counties. Froth and injury was conspicuous by May 1 and damage continued until adults appeared the last of May. Spraying was quite general from Talbot County to Washington.

Measurements showed that spittlebug control in clover hay gave increased yields up to 50 percent. POTATO LEAFHOPPER (Empoasca fabae) appeared in alfalfa June 15 to 20 and was present in damaging numbers until about August 10. Most of the injury was to the second cutting. GREEN JUNE BEETLE (Cotinis nitida) grubs caused minor damage to alfalfa in Caroline County in September. ALFALFA PLANT BUG (Adelphocoris lineolatus) -- This new pest of alfalfa in Maryland was in Prince Georges, Anne Arundel, Harford, Frederick and Washington Counties. PEA APHID (Macrosiphum pisi) was generally present on alfalfa the first of April, but no heavy infestations were observed except in Kent County. Vetch and crimson clover were infested in Talbot County.

Fruit and Nut Insects: In western Maryland injury from first-brood CODLING MOTH (Carpocapsa pomonella) was about normal. The second and third broods were much heavier than usual, due to hot dry weather, and increased injury to fruit resulted. PLUM CURCULIO (Conotrachelus nenuphar) caused very little injury to peaches, but injury to early apples was heavier than usual, due to ineffectiveness of the lead arsenate in the petal fall and first cover sprays. Population of first-brood RED-BANDED LEAF ROLLER (Argrotaenia velutinana) was rather heavy in some orchards but control measures were effective. YELLOW-NECKED CATERPILLAR (Datana ministra) was not as widely distributed as in 1951 and 1952 but caused injury in localized areas. Heavy infestations of GRASSHOPPERS occurred in several orchards. EUROPEAN RED MITE (Metatetranychus ulmi) infestation heavier than for the past several years. TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus) infestations were extremely heavy in spots during late August, damage much heavier than has ever occurred in this area. CAT-FACING INSECTS - Population on peaches about the same as has occurred in the past several years. Some damage occurred when the petal fall spray was omitted. No serious damage by ROSY APPLE APHID (Anuraphis roseus) in any orchard; APPLE APHID (Aphis pomi) infestation much lighter than in 1952. PERIODICAL CICADA population was heavy in all orchards where trees existed in 1936 and had not been removed but damage to old trees was not serious. Serious damage occurred to trees three years old and younger; the only effective control was through use of cheesecloth wrappers. (Graham). In other sections SCHOENE MITE (Tetranychus shoenei) gave trouble on apples at Fairland in July.

EUROPEAN FRUIT LECANIUM (Lecanium corni) and FORBES SCALE (Aspidiotus forbesi) abundant on peaches at Burtonsville, in November. Chestnuts were infested with the LARGE CHESTNUT WEEVIL (Curculio proboscideus) in Queen Annes and Prince Georges Counties with up to 15% infestation in one planting. FILBERTWORM (Melissopus latiferreanus) was abundant in filbert nuts in Calvert County.

Vegetable Insects: ASPARAGUS BEETLE (Crioceris asparagi) was numerous in Cecil County in April and SPOTTED ASPARAGUS BEETLE (C. duodecimpunctata) at Beltsville in June. MEXICAN BEAN BEETLE (Epilachna varivestis) was present in light to moderate numbers on early beans with 4 percent recorded damage to pods on untreated plants in Montgomery County; SEED-CORN MAGGOT (Hylemya cilicrura) caused trouble mainly on limas from old seed; POTATO LEAFHOPPERS (Empoasca fabae) were generally light on beans; CORN EARWORM (Heliothis armigera) caused some damage to snap beans on the Shore in July. TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus) was injurious to snap beans and cantaloupes in Wicomico County, July. CABBAGE LOOPER (Trichoplusia ni) damaged broccoli in Kent and Wicomico Counties in July, cabbage in Montgomery County in September. CABBAGE APHIDS were prevalent in Montgomery County in October. STRIPED CUCUMBER BEETLE (Acalymma vittata) caused damage to cucurbits on the lower Shore in May; SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) was prevalent at Fairland in October; SQUASH BUGS (Anasa tristis) injured cucurbits in Montgomery County in July; and PICKLEWORM (Diaphania nitidalis) infested squash in Montgomery County in October. PEA APHID (Macrosiphum pisi) was prevalent on the Eastern Shore and airplane spray applications were general the first part of May. EUROPEAN CORN BORER (Pyrausta nubilalis) injured peppers in Worcester County. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was rather heavy in both potatoes and tomatoes; FLEA BEETLES attacked tomatoes on the Shore. HORNWORMS were moderately abundant on tomatoes; and TOMATO FRUITWORM (Heliothis armigera) injured a late crop in St. Marys County. A VINEGAR GNAT (Drosophila sp.) became serious at canneries in late August. POTATO TUBERWORM (Gnorimoschema operculella) was present in stored potatoes.

Tobacco Insects: Plant bed insects included LEATHER JACKETS, FLEA BEETLES and GREEN JUNE BEETLE. GRASSHOPPERS noted in 3 areas. HORNWORMS injurious in Calvert and St. Marys Counties. Two broods and two species, *Protoparce sexta* and *P. quinquemaculata*. BUDWORMS did conspicuous damage in July. GREEN PEACH APHIDS became thick in August.

Stored Products Insects: SPIDER BEETLES - *Gibbium psylliodes* - occurred in large numbers in a department store in Cambridge in April and May. *Ptinus fur* was taken in tobacco seed in February.

Household Insects: BLACK WIDOW SPIDER (*Latrodectus mactans*) occasioned numerous calls in July and August from the vicinity of College Park and Baltimore. TERMITES were the subject of a special meeting in Chestertown. Requests for information or assistance on termites came from several counties.

Forest, Shade Tree and Ornamental Insects: WALKINGSTICKS again did conspicuous damage to deciduous trees on Polish Mountain, Allegany County, but were not as widespread as in 1952. They were first observed June 25 and continued feeding until late fall. AZALEA LACE BUGS were noted in May and July, from numerous localities. LOCUST LEAF MINER was extremely severe in June in Calvert County. ELM LEAF BEETLE was abundant August 13 near Cumberland. GIANT HORNET observed taking bark from shrubs, October, Rockville. *Neuroterus* sp. (det. Weld) in myriads causing defoliation of large white oak, October, at Hillendale. SPRUCE SPIDER MITE was severe on spruce at University Park in June and at Upper Marlboro in August. AN APHID (*Myzocallis tiliae*) and a MITE (*Czenspinskia lordi* caused defoliation of lindens at College Park in late summer.

Numbers of JAPANESE BEETLES (*Popillia japonica*) have generally decreased over the State. There was some increase in southern Maryland and local damage in spots on the Eastern Shore and in central areas. There were a few more beetles in Garrett County. New housing developments around Washington were plagued.

## Gypsy Moth Defoliation - Summer of 1953

Reported by H. L. Blaisdell

In the summer of 1950 gypsy moth (Porthetria dispar) had declined to an extremely low population level and defoliation of forest growth by this insect that year was only 5,400 acres. In succeeding years the winters in New England were mild and conditions otherwise were very favorable for rapid increase of this insect. As a result of these unusual conditions more than 1,487,000 acres were defoliated by gypsy moth in the summer of 1953. The previous high peak in population abundance occurred in the summer of 1945 when nearly 821,500 acres were defoliated throughout the infested area. As would be expected, there was far greater mortality of trees in the summer of 1953 than in any year since the gypsy moth first became established in the United States.

There was also proportionately greater loss in increment growth in the areas within which defoliation occurred. It has experimentally been determined that in the higher categories of defoliation the loss in the increment growth is in direct proportion to the percentage of defoliation. That is to say, a tree 75 percent defoliated would only show an increment growth of 25 percent of the normal growth of that tree. Although there was considerable mortality of the hardwoods in the areas 75-100 percent defoliated in the summer of 1953, the conifers also suffered severely. Mortality of the hemlocks from 75-100 percent defoliated was unusually heavy. On the basis of observations made this fall it is anticipated that defoliation in the summer of 1954 will be at least equal to and perhaps greater than that which occurred in the summer of 1953.

The only hope for reduction in defoliation another year is the possibility of heavy mortality of the eggs during the winter months if temperatures drop to minus 20 or lower throughout the entire infested area and re main constantly at that level for a period of several hours. The area has not been favored with such low temperatures in recent years. Although parasites, predators and the wilt disease are very important as a means of holding the gypsy moth in check, these valuable factors of control are apparently unable to fully cope with the problem when mild winters occur successively over a period of years and there is little or no winter mortality of the eggs.